

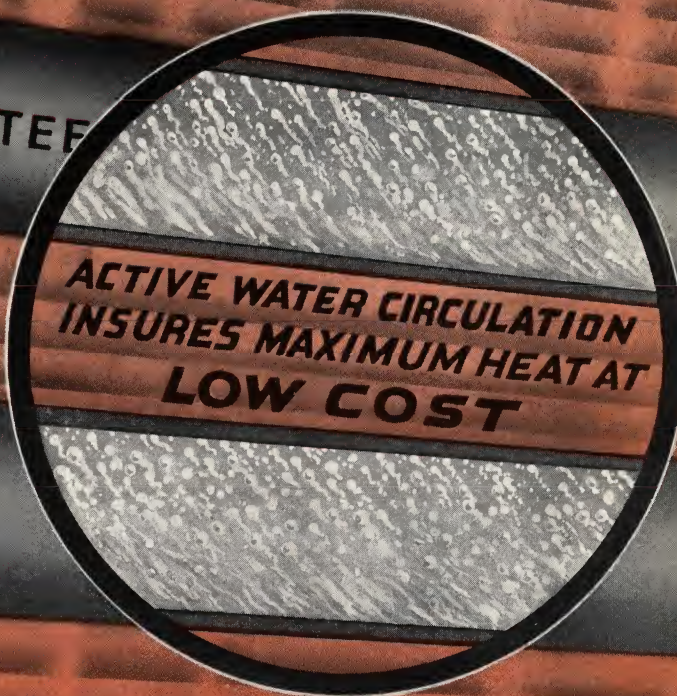
INTERNATIONAL **"FUEL-SAVER"** WATER TUBE STEEL HEATING BOILERS

"FUEL-SAVER" WATER TUBE STEEL

"FUEL-SAVER" WATER TUBE STEEL HEATING BOILER

"FUEL - SAVER" WATER TUBE STEEL

STEEL HEATING BOILER



**ACTIVE WATER CIRCULATION
INSURES MAXIMUM HEAT AT
LOW COST**

OIL-BURNING
HAND-FIRED COAL
STOKER-FIRING

WATER TUBE BOILERS FOR SMALL OR LARGE
CAPACITY HEATING PLANTS for Residences, Public
Commercial, Institutional, and Industrial Buildings

THE INTERNATIONAL BOILER WORKS CO.
EAST STROUDSBURG PENNSYLVANIA, U. S. A.

NOW the savings of Water Tube Steel Boilers are available for LOW PRESSURE HEATING PLANTS

THE INTERNATIONAL BOILER WORKS COMPANY

ESTABLISHED 1886

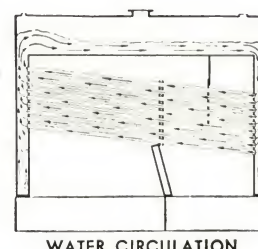
Engineers have long accepted the *water tube* type of boiler as the most efficient for industrial and marine use, yet, it remained for the International Boiler Works Company to prove with its Water Tube "Fuel-Saver" that the same quick-steaming and economy demanded by industry could be reproduced in a steel boiler for heating purposes and that such a boiler could be built and sold at a price decidedly in line with less up-to-date heating boilers.

The superiority of "Fuel-Saver" Water Tube Boiler performance is best indicated by their remarkably quick pickup and fuel economy, which is comparable to the efficiency required of the most modern steam generating plants.

Four Reasons Why INTERNATIONAL WATER TUBE Steel Boilers are "FUEL-SAVERS"

1 **QUICKER HEATING** —Because of More Active Water Circulation

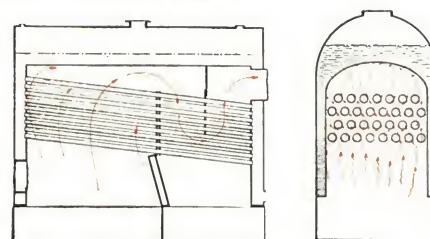
The drawing to the right illustrates the exceptionally active circulation of water in "Fuel-Saver" Water Tube Steel Boilers. Instead of lying sluggishly in a large mass, the water travels in a natural ring circuit formed by the slanting water tubes, the front and rear headers and the water over the crown. The faster the circulation, the more heat is absorbed and carried into the heating system. As the water passes through the water tubes, it is divided into small streams, greatly facilitating the quick absorption of heat.



WATER CIRCULATION

2 **INCREASED HEAT ABSORPTION** —Due to Effective Distribution of Heated Gases

In the drawings to the right note how the hot gases in a "Fuel-Saver" pass directly upward into the banks of tubes and are broken up into innumerable small currents by the successive layers of tubes. This breaking-up action forces every particle of heat into close contact with the tube heating surfaces where it is then rapidly absorbed. Note also that most of the heating surface is located above and directly in the path of the heated gases. Such surface is known as "prime" heating surface and is an important measure of the economy of a boiler.



HEAT DISTRIBUTION

3 **EASY TO KEEP CLEAN**

In the drawing to the right below, the upper layer of tubes shows the maximum amount of soot that can accumulate on the surface of water tubes. In contrast, note how the soot can gather on the inside of fire tubes and reduce the draft and heat absorbing surfaces, as shown in the lower row of tubes.



FIRE TUBES

4 **GREATER STRENGTH** —For Long Life—Dependable Service and Heavy Duty

"Fuel-Saver" Boilers are constructed of open hearth steel plates welded into a solid unit by the improved "Shielded-Arc" method. Every seam and joint is tested under pressure and will not open or leak under the most severe strains caused by expansion or contraction. These boilers are built in conformity with, or excess of, requirements of A.S.M.E. code for Low Pressure heating boilers.

The economical features of the International Water Tube Boiler mentioned above, combine to justify the name "Fuel-Saver," because they result in the absorption of more heat units into the heating system and less waste of heat through the chimney.

SAVE WITH THE INTERNATIONAL "FUEL-SAVER"

Quick Pick-up of "**FUEL-SAVER**" Boilers is Highly Effective in **OIL FIRING**

"**FUEL-SAVER**"

Type "C" Water Tube
Steel Heating Boiler

FOR OIL OR GAS FUEL

FOR

OFFICE and APARTMENT
BUILDINGS

SCHOOLS

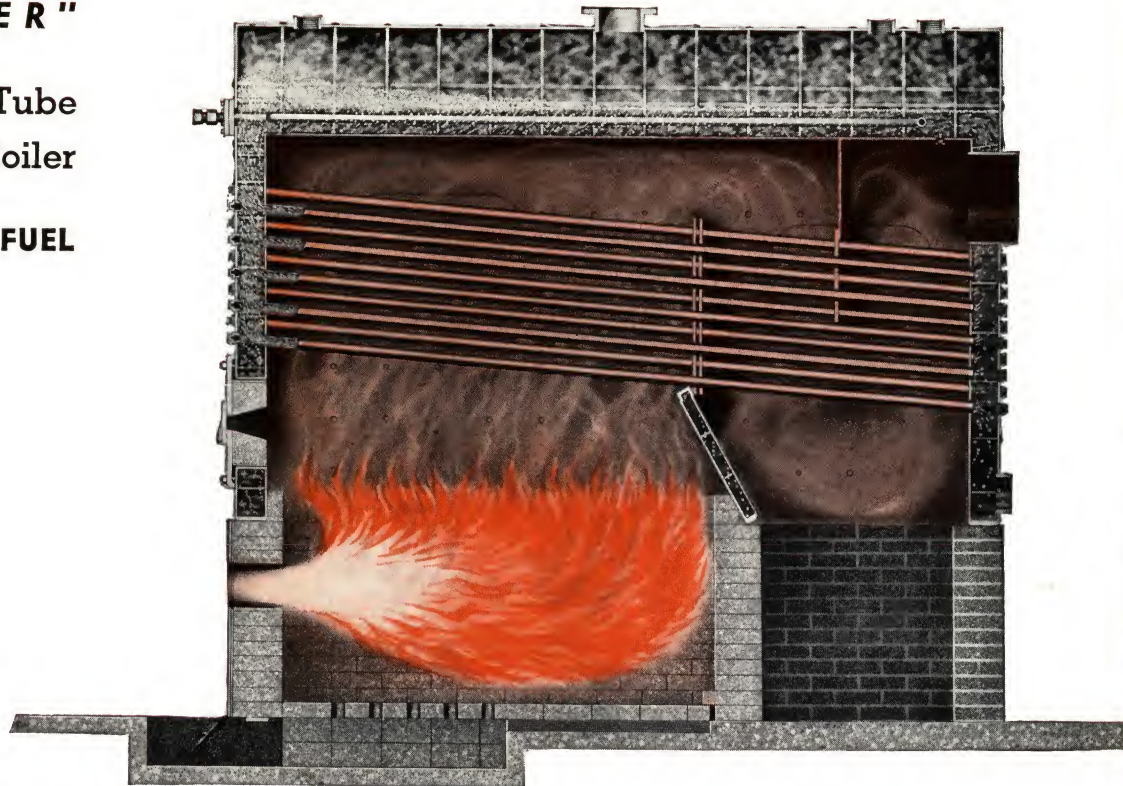
THEATRES

HOTELS

INSTITUTIONS

INDUSTRIAL PLANTS

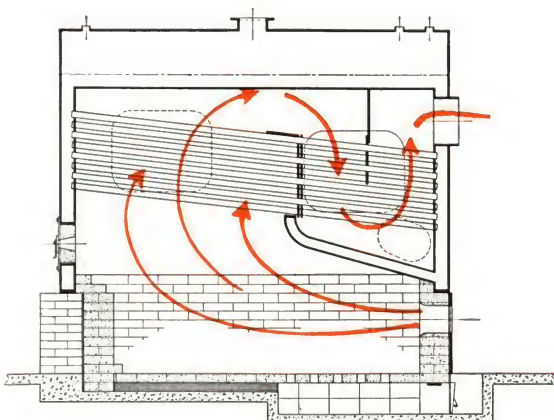
AND SIMILAR
REQUIREMENTS



REAR-FIRED "**FUEL-SAVER**"

Type C "Fuel-Saver" for oil-firing can be furnished for rear-firing as shown below. Note extra long combustion chamber and possibility for provision of coal grates at rear of combustion chamber for incineration or emergency coal-firing.

The rear-fired boiler also provides a front smoke outlet with three gas passes where location of stack or breeching requires.



FRONT FIRED "**FUEL-SAVER**"

The intense heat generated by the oil flame and the intermittent automatic firing necessitate a type of construction providing exceptionally rapid pickup. The outstanding superiority of Water Tube Boilers in this respect makes The International "Fuel-Saver" the ideal boiler for oil.

The advent of oil fired heating systems for low-pressure heating increased the demand for the water tube boiler in this field. Older methods of design and construction leave much to be desired in automatic firing of heating boilers. Intermittent on and off periods in oil-heating call for quick action on the part of the boiler. Water tube boilers with their active water circulation, quickly respond to the heat of the oil burner when it comes on after an idle period. Thus room temperatures are maintained within closer limits than in other types of boilers, where the response is slower because of less active water circulation.

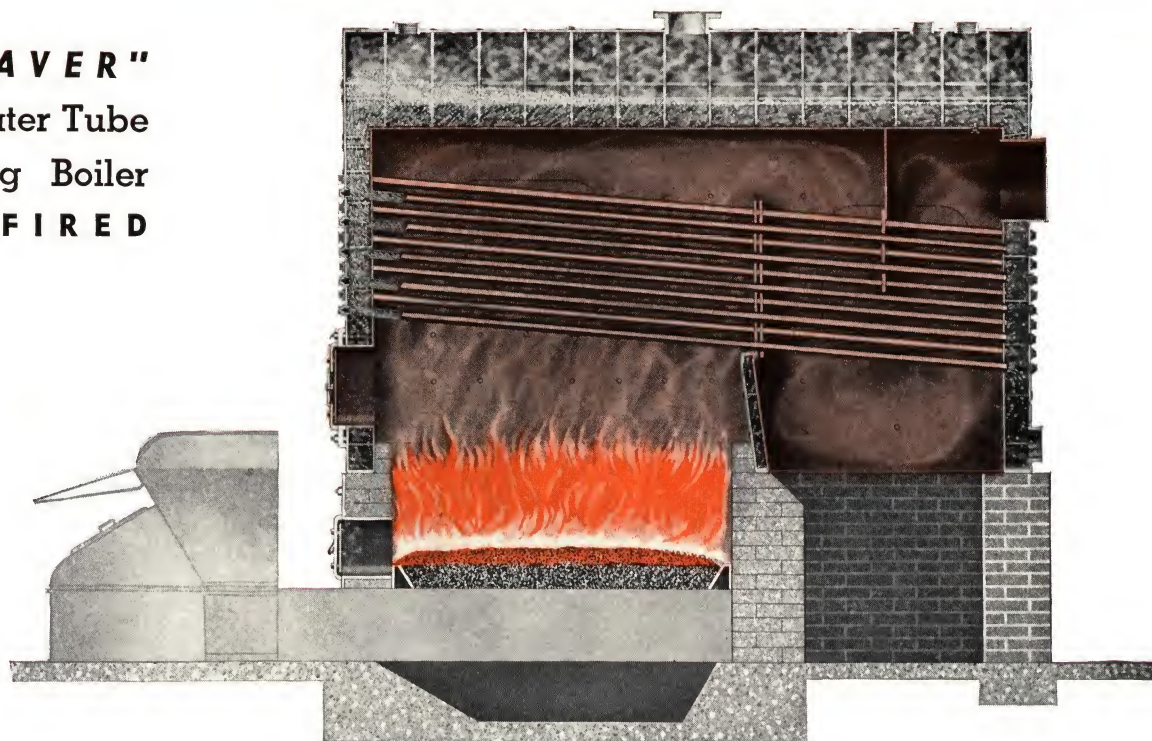
The high quality of construction employed in making "Fuel-Savers" shows to its best advantage in oil-firing. Intermittent firing, with its quick changes in internal boiler temperatures, puts a severe stress on the materials and workmanship incorporated in a boiler. The excellent performance of "Fuel-Savers" and the extremely low insurance rates obtainable are a strong testimonial to the soundness of their construction. Type C Oil-Fired Boilers can be furnished for either front or rear firing.

THE INTERNATIONAL BOILER WORKS COMPANY

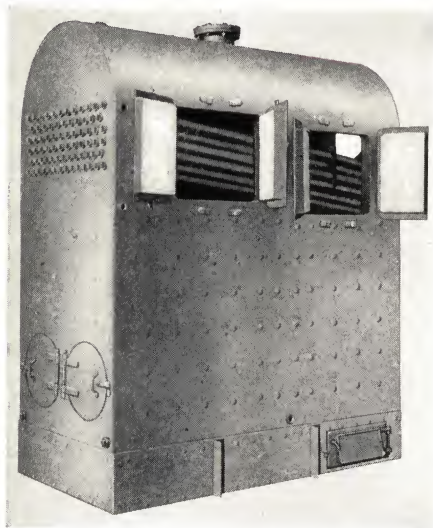
"FUEL-SAVERS" Synchronize STOKER FIRING with Outstanding Success

"FUEL-SAVER" Type "C" Water Tube Steel Heating Boiler STOKER FIRED

At Right
Section Showing
Stoker Fired
"Fuel-Saver"
Boiler



HIGH FIREBOX BOILER FOR MECHANICAL FIRING



Extended Water Leg or High Fire Box
Boiler can also be furnished when required
as shown above.

Increased combustion volume and proper
height to first row of water tubes is accom-
plished by addition of actual heating surface
in form of extended water legs instead of
by brick setting. An extra charge for this
construction is made over standard type
"C" boiler.

The International "FUEL-SAVER" because of its water tube design is well qualified to utilize the extreme flexibility of stoker operation.

The Modern stoker is capable of producing in furnace of heating boiler the same high combustion rates and efficiencies that are demanded in power plant practice, but for maximum heating economy the heat thus liberated must be absorbed by the boiler at correspondingly high rates and efficiencies.

The high fire box temperatures and heat release normal to stoker operation are readily absorbed by the water tube heating surface of International "FUEL-SAVER" boilers. The effective distribution of the products of combustion in contact with the water tube heating surface and the rapid and positive circulation of boiler water combine to carry the heat units away from the fire at accelerated speed as the combustion rate increases.

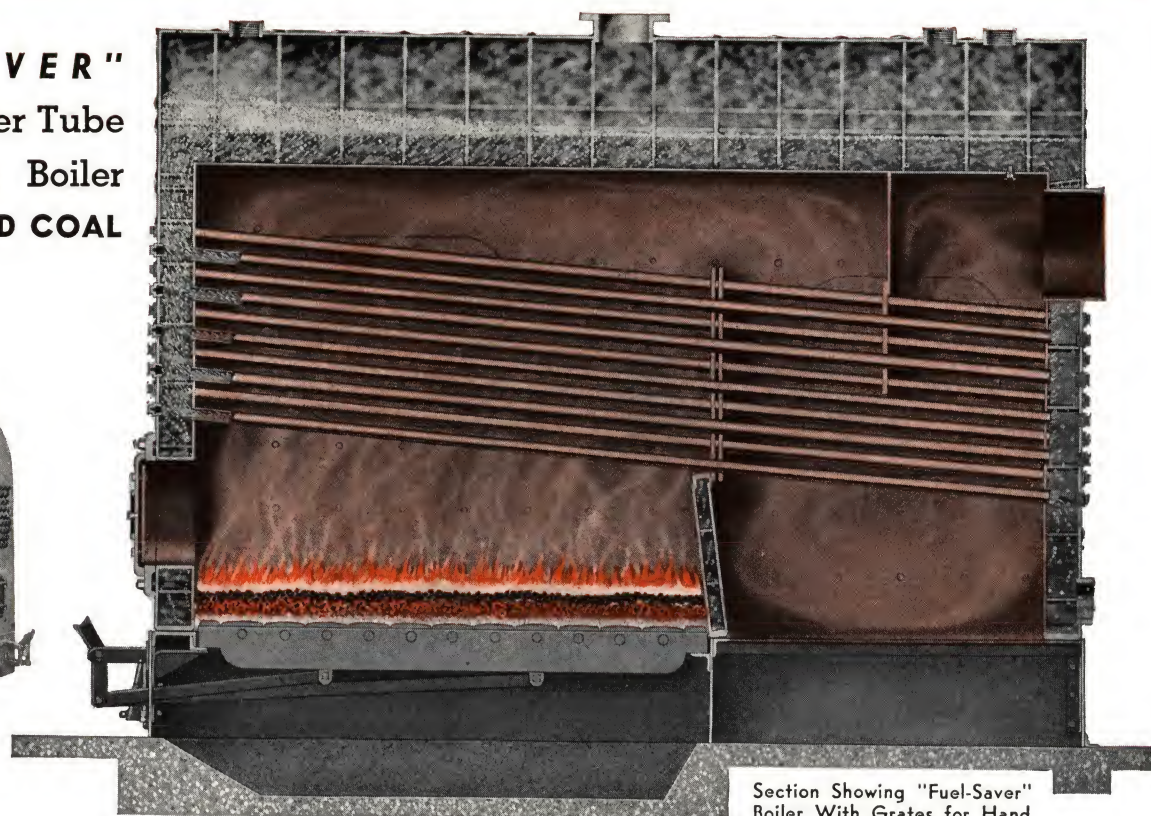
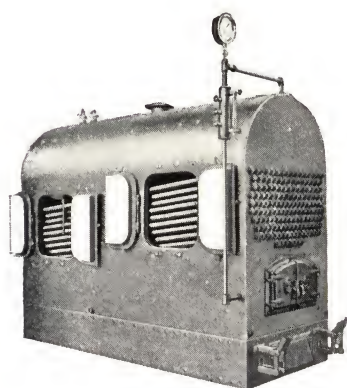
The stoker capacity for high combustion rates is especially valuable in connection with "FUEL-SAVER" as water tube boilers operate at maximum efficiency when carrying loads considerably in excess of their rating. Overloads will not cause priming.

The water tube heating surface of International "FUEL-SAVER" is ideally located in relation to radiant heat of the fuel bed on stoker retort, approximately 60 percent of this heating surface lying directly over the fire in the form of water tubes which are the most effective heat absorbing surface. The crown sheet, which is the least effective, is furthest removed from the fire and is thus fully protected.

"FUEL-SAVER" boilers are virtually self cleaning due to the fact that water tube heating surface and vertical baffling presents minimum space for fly ash and soot collection. This is an important factor in stoker firing as the boiler will operate for longer periods without excessive loss in efficiency or draft.

INTERNATIONAL "FUEL-SAVER" Gets the utmost in B. T. U.s from COAL FIRING

"FUEL-SAVER" Type "C" Water Tube Steel Heating Boiler FOR HAND-FIRED COAL



Section Showing "Fuel-Saver"
Boiler With Grates for Hand
Firing Coal

The steady, even heat of solid fuel is generated to best advantage in a "Fuel-Saver" Type C Coal-Burning Boiler.

Equipped with vertical baffles, the "Fuel-Saver" does not accumulate dirt, ashes or soot. Even the tube surfaces afford little foothold because of their roundness and the sweeping action of the draft. All ash falls to the base of the boiler where it can readily be removed, thus preventing the clogging up of the boiler draft areas.

The unusually large combustion space and the long three-pass draft travel of all "Fuel-Saver" Water Tube Steel Boilers, combined with the low draft loss through the boiler, insure exceptionally complete combustion of the entire input of fuel. The burning fuel requires plenty of combustion and draft space for best results and these are found nowhere in better proportion than in the "Fuel-Saver." The low draft loss in the Type C Boiler also permits maintenance of satisfactory firing conditions with minimum attention.

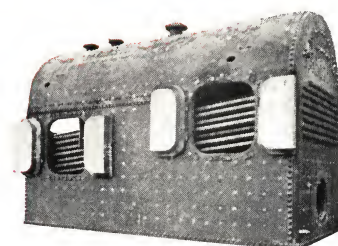
The grates and shaking mechanism are made of best materials and are of extra heavy and durable construction. Grate bars can be provided for burning any type of solid fuel and are shipped completely assembled in bases.

"FUEL-SAVER" For High Pressure Service Type "CR" Riveted for 100, 125, 150 lbs. W.P. A.S.M.E. ST'D,

For installations requiring high pressure steam such as Hospitals, Laundries, Hotels, and Industrial Plants the type CR boilers offer the quick steaming and high fuel economy of the modern water tube design.

The boiler is of heavy riveted construction and meets all of the requirements of A.S.M.E. Code.

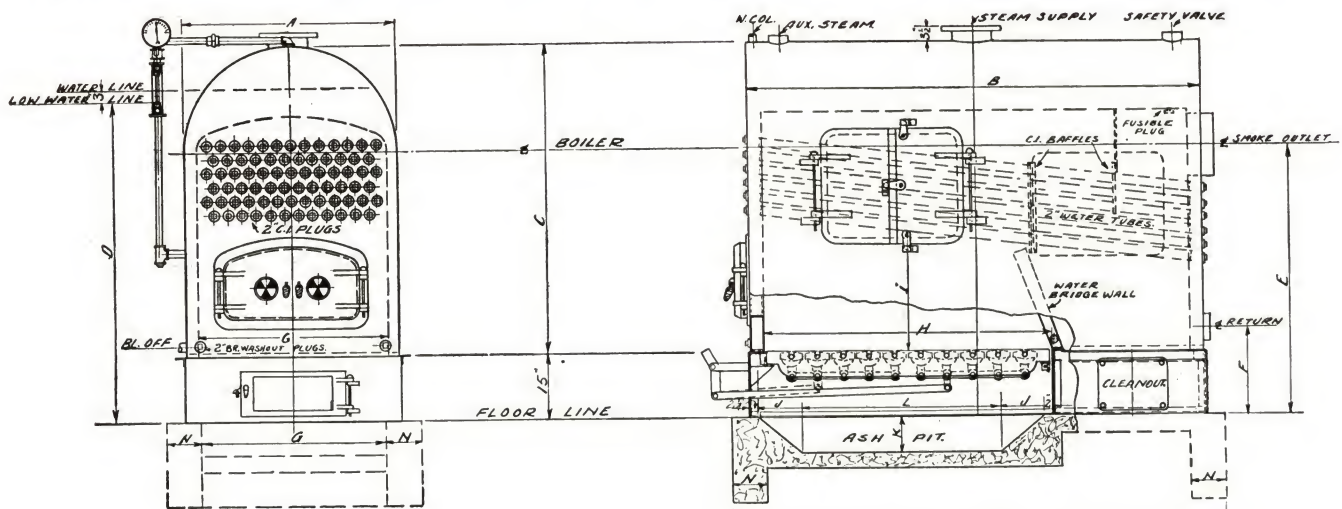
Type "CR" is manufactured in a complete range of sizes from 5 to 250 horsepower.



Catalog on Request

THE INTERNATIONAL BOILER WORKS COMPANY

CAPACITIES and DIMENSIONS FOR "FUEL-SAVER" Type "C"—Series 500 Welded Steel Heating Boilers



For Oil, Gas, Stoker or Hand Fired Coal

*Cleanout door hinges project on side of Boiler—Allow 3 inch for clearance purposes.

**Steam outlet nozzle projects beyond height—Allow 6 inch for clearance purposes.

Boiler Number	521	522	523	524	525	526	527	528	529	530	531	532	533	534	535	536	537	538
Steam rating—mech. fired	2680	3160	3650	4250	4860	5470	6080	7290	8500	10330	12150	15180	18220	21250	24290	30360	36430	42500
Steam rating—hand fired	2200	2600	3000	3500	4000	4500	5000	6000	7000	8500	10000	12500	15000	17500	20000	25000	30000	35000
Heating surface—water tube	158	186	215	250	286	322	358	429	500	608	715	893	1072	1250	1429	1786	2143	2500
Grate area	9.4	9.4	10.3	11.6	12.3	13.8	15.4	16.9	19.7	20.4	22.4	25.2	29.8	30.5	33	39.1	42.5	46.1
A—Boiler width*	30	30	36	36	43	43	43	43	49	55	55	61	61	68	68	74	80	86
B—Boiler length	5-9	5-9	5-9	6-9	6-9	7-9	7-9	8-9	8-9	8-9	9-9	9-11	10-11	10-9	12-9	13-9	14-9	15-9
C—Boiler only, height**	4-5 1/2	4-8 1/2	5-0	5-0	5-6 1/2	5-6 1/2	5-9 1/2	5-9 1/2	6-2	6-2 1/2	6-9 1/2	6-9 1/2	7-8	7-8	8-2	8-2	8-4	8-7
D—Water column height	5-0	5-3	5-6	5-6	5-11	5-11	6-2	6-2	6-2 1/2	6-9 1/2	6-9 1/2	7-8	7-8	8-2	8-2	8-4	8-7	8-9
E—Smoke outlet height	4-3	4-6	4-8	4-8	5-0	4-10 3/4	5-1 3/4	5-1 3/4	5-2 1/2	5-8 1/2	5-8 1/2	6-5 1/2	6-5 1/2	6-10	6-10	6-10 1/2	7-0	7-0 1/2
F—Return height	19	19	19	19	19	19	19	20	20	20	20	20	20	20	20	21	21	21
G—Comb. chamber and pit width	24 7/8	24 7/8	30 3/4	30 3/4	36 3/4	36 3/4	36 3/4	42 3/4	48 3/4	48 3/4	54 1/2	54 1/2	60 1/2	60 1/2	66 1/2	72 3/8	78 1/4	84 1/2
H—Comb. chamber length	54 1/2	54 1/2	48 1/2	54 1/2	48 1/2	54 1/2	60 1/2	66 1/2	66 1/2	60 1/2	66 1/2	66 1/2	78 1/2	72 1/2	78 1/2	84 1/2	84 1/2	84 1/2
I—Tube ht. comb. cham. front	25 1/4	25	26 1/2	26 1/2	28 1/4	28 1/4	29 1/4	30 1/2	35	35	36	36	38	38	40	41	42 1/4	42 1/4
J—Ash pit taper	8	8	8	8	8	8	8	8	10	10	10	10	10	10	10	10	10	10
K—Ash pit depth	6	6	6	6	6	6	6	6	8	8	8	8	8	8	8	8	8	8
L—Ash pit length	3-2	2-8	3-2	2-8	3-2	3-8	4-2	3-8	4-2	3-10 1/4	3-11 5/8	4-5 5/8	4-6 5/8	5-0 5/8	5-0 5/8	5-6 3/4	5-6 3/4	5-6 3/4
M—Foundation length	6-6	6-6	6-6	7-6	7-6	8-6	8-6	9-6	9-6	10-6	11-0	12-0	12-0	13-10	14-10	15-10	16-10	16-10
N—Foundation thickness	8	8	8	8	8	8	8	8	8	8	8	12	12	12	12	12	12	12
Disengagement area	12.4	12.4	14.3	16.8	20	23	23	28	30.4	35	38	43.4	48.5	52.4	57.4	74	84.3	94.8
Water content	116	128	167	190	228	252	262	300	315	458	480	615	740	875	950	1215	1405	1555
Steam supply size	6	6	6	6	6	6	6	8	8	8	8	8	8	8	8	10	10	10
Return size	4	4	4	4	4	4	4	5	5	5	5	5	5	5	5	6	6	6
Number of safety valves	1	1	1	1	1	1	1	1	1	1	1	1	2	2	2	2	2	2
Safety valve size	2	2	2	2	2	2	2 1/2	2 1/2	3	3	3	2	2 1/2	2 1/2	2 1/2	3	3	3
Fire door size	11x24	11x24	11x24	11x24	11x24	11x24	11x24	11x24	11x32	11x32	11x32	16x30	16x30	16x30	16x30	16x30	2-16x24	2-16x24
Cleanouts number	1	1	1	2	2	2	2	2	2	2	2	2	2	2	3	3	3	3
Cleanout size	18x30	18x30	18x30	18x24	18x24	18x30	18x30	18x30	24x30	24x30	24x30	30x30	30x30	30x30	30x30	30x30	30x36	30x36
Smoke outlet size	8x17	8x20	10x20	10x20	12x22	12x22	14x22	14x22	14x28	14x36	14x36	16x36	16x39	18x42	18x48	20x54	20x60	22x66
Smoke outlet area	122	146	178	178	233	233	266	266	350	462	462	521	569	686	794	994	1114	1348
Breeching diameter, one boiler	17	18	18	19	20	21	22	23	24	26	28	30	31	33	35	39	41	43
Stack diameter, one boiler	15	16	16	17	18	19	20	21	22	24	26	28	29	31	33	36	38	40
Minimum height of stack, one boiler	45	50	50	55	55	60	60	65	65	70	75	75	75	80	85	95	105	110
Breeching diameter, two boilers	23	24	24	25	26	27	28	30	31	34	36	40	41	44	47	50	54	56
Stack diameter, two boilers	21	22	22	23	24	25	26	28	29	32	34	37	38	41	44	47	50	53
Minimum height stack, two boilers	55	60	60	65	65	70	70	75	75	80	85	85	85	90	105	105	120	120
Covering surface	80	83	95	107	125	139	143	156	171	197	207	245	268	305	325	390	444	490
Weight complete, approximately	3885	4085	4850	5425	6235	6900	7175	8200	9360	10580	11625	15050	16610	18885	21450	25420	30620	34760
Furnace volume	15.9	15.9	19	22	24	27.5	31.8	35.8	42.6	51	54.2	64.4	76.6	84.7	90	111.1	128.6	165.5

SAVE WITH THE INTERNATIONAL "FUEL-SAVER"

"FUEL-SAVER" Type KD for Renovation and Replacement in Existing Buildings with Small Openings

Type "KD"

KNOCK DOWN

**FOR OIL,
HAND - FIRED COAL
AND STOKER FIRING**

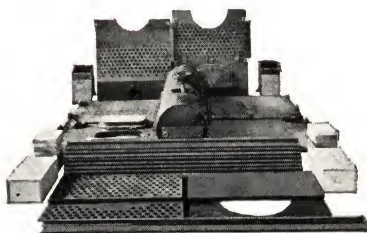


Eliminates Costly Cutting and Patching of Building Walls

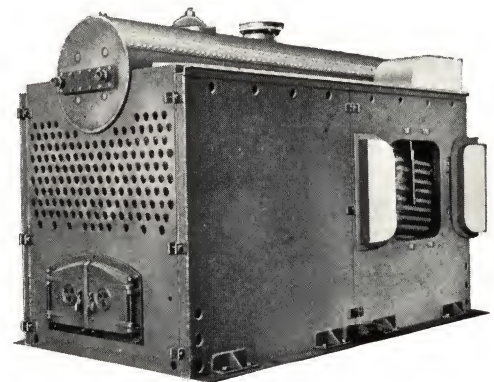
The Type KD Steel Water Tube Boiler was designed to meet the growing need for a boiler that would heat large buildings, where there is no way of getting a one-piece steel boiler in the building without excessive cutting and patching. It is shipped in parts and erected in the boiler room.

Erected in Boiler Room by Competent Boiler Makers

All work is done by our own boiler makers or by local boiler makers who have satisfied us that they are as competent as our men, for we accept full responsibility for the boiler erection work. In the knocked down condition the parts of even a 300 horse power Type KD boiler may be taken through an ordinary boiler room door or down an ordinary fire passage in a basement.



**TYPE "KD" BOILER COMPLETELY
KNOCKED DOWN AS FOR SHIPMENT**

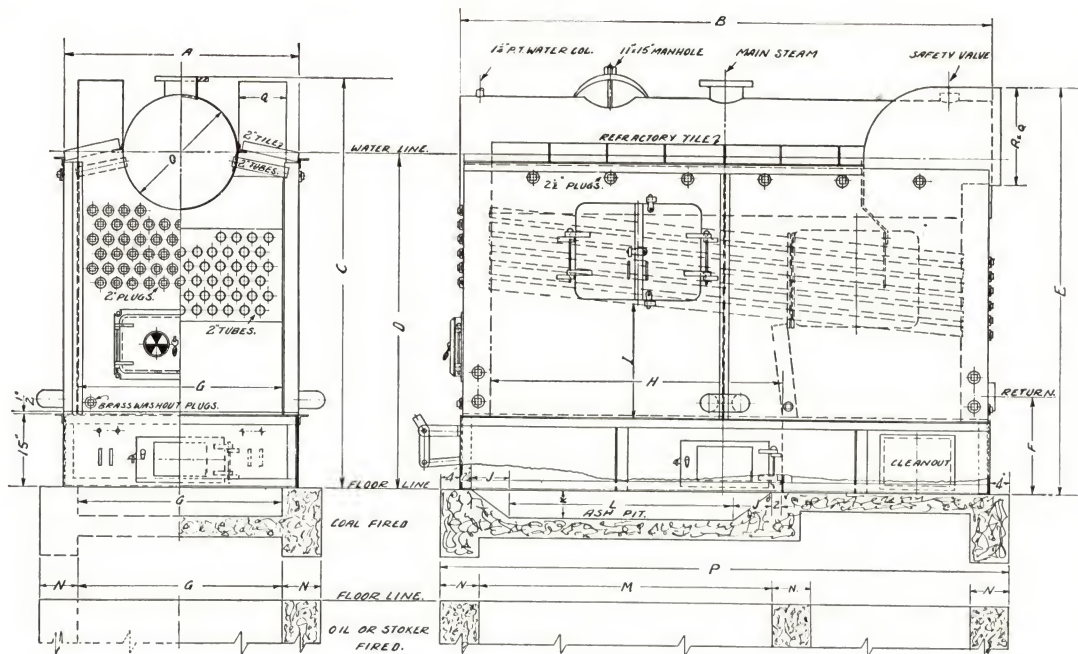


It Possesses the Same Features of Economy and Other Advantages as the Type C

The boiler is set up and when turned over to the heating contractor for connection, is a permanent installation and carries the same guarantee as all our other boilers. Like the Type C Boiler, it is of the latest water tube design and the same rugged construction throughout. The Type KD Boiler combines the same features of water tube economy as the Type C, with the same quick steaming qualities and differs only in that it is so designed that it can be shipped in parts and erected on the job, thereby effecting substantial savings in renovation and replacement work.

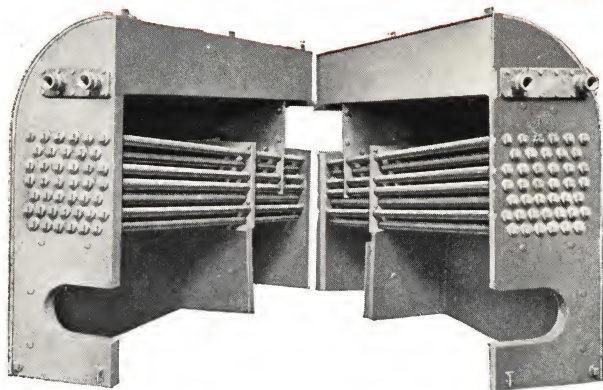
THE INTERNATIONAL BOILER WORKS COMPANY

DIMENSIONS and CAPACITIES of "FUEL-SAVER" TYPE "KD" BOILER



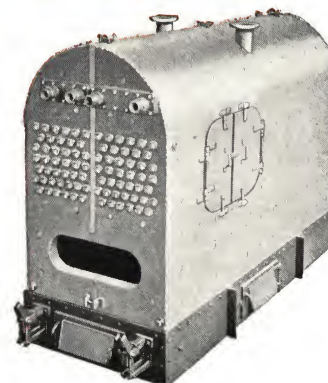
Boiler Number	KD	30	40	50	60	70	80	90	100	120	140	160	180	200	250	300
Steam rating—mech. fired	sq. ft.	5850	7630	9640	11420	13190	15160	17150	18970	22490	26380	30720	34030	37980	47410	56470
Steam rating—hand fired	sq. ft.	4810	6280	7940	9410	10860	12490	14125	15625	18520	21730	25300	28030	31280	39050	46510
Heating surface—water tube	sq. ft.	344	449	567	672	776	892	1009	1116	1323	1552	1807	2002	2234	2789	3322
Grate area	sq. ft.	15.75	17.5	20	22	24.75	27	29.25	30	32.5	35.75	38.5	42	45	49	60
Combustion volume	cu. ft.	31	34.4	43.5	46.9	53.7	60.8	80.1	72.6	78	101.7	111.4	131.7	150.6	173.9	196.3
A—Boiler width	ft. in.	4'-1 1/4"	4'-1 1/4"	4'-7 1/4"	4'-7 1/4"	5'-1 1/4"	5'-1 1/4"	5'-1 1/4"	5'-1 1/4"	5'-7 1/4"	6'-1 1/4"	6'-1 1/4"	6'-7 1/4"	7'-7 1/4"	8'-7 1/4"	8'-7 1/4"
B—Boiler length	ft. in.	8'-3 1/4"	9'-2 1/4"	10'-0"	10'-0"	10'-2 1/4"	11'-0 1/4"	11'-10 1/4"	10'-10 1/4"	12'-10 1/4"	13'-10 1/4"	14'-10 1/4"	14'-10"	15'-9 3/4"	15'-10"	15'-10"
C—Hght. to top of steam outlet	ft. in.	6'-9 1/2"	7'-0 1/2"	7'-9 1/2"	8'-0 1/2"	8'-0 1/2"	8'-3 1/2"	8'-9 1/2"	8'-10 1/2"	8'-10 1/2"	9'-9 1/2"	9'-9 1/2"	10'-3 1/2"	10'-5 1/2"	11'-3 1/2"	11'-3 1/2"
D—Hght. to top of waterline	ft. in.	5-6	5-9	6-3	6-6	6-6	6-9	7-3	7-4	7-4	8-0	8-0	8-6	8-8	9-3	9-3
E—Hght. to top of smoke outlet	ft. in.	6-3 1/2"	6-11 3/4"	7-10	8-4 1/2"	7-9 3/4"	8-2 1/4"	8-11 3/4"	8-8 1/2"	9-1	10-2 1/2"	10-6	10-7 1/4"	11-0 1/4"	11-5 3/4"	11-2 1/4"
F—Height of return	in.	19	19	20	20	20	20	20	20	20	20	21	21	21	21	21
G—Width of comb. chamber & pit	in.	42 1/2	42 1/2	48 1/2	48 1/2	54 1/2	54 1/2	54 1/2	60 1/2	60 1/2	66 1/2	66 1/2	72 1/2	72 1/2	84 1/2	96 1/2
H—Lgth. of comb. chamber—coal	in.	54 1/2	60 1/2	60 1/2	66 1/2	66 1/2	72 1/2	78 1/2	72 1/2	78 1/2	78 1/2	84 1/2	84 1/2	90 1/2	84 1/2	90 1/2
I—Tube ht. at comb. chamb. front	in.	26	26	29	29	29	30 1/2	36 1/2	32 1/2	32 1/2	41	39	42 1/2	44 1/2	47	43 1/4
L—Length of ash pit	ft. in.	40 1/2	46 1/2	46 1/2	52 1/2	48 1/2	54 1/2	60 1/2	54 1/2	60 1/2	60 1/2	66 1/2	66 1/2	72 1/2	66 1/2	72 1/2
O—Diameter of drum	in.	24	24	30	30	30	30	30	30	30	36	36	36	36	42	42
P—Foundation length	ft. in.	8-11	9-10	10-8	10-8	11-2	12-2	12-10	11-10	13-10	14-10	15-10	15-10	16-10	16-10	16-10
QxR—Smoke outlets—outside, ea.	in.	9 1/2 x 14 3/4	9 1/2 x 20	9 1/2 x 25 1/4	9 1/2 x 28 3/4	12 1/2 x 22	12 1/2 x 23 3/4	12 1/2 x 27	15 1/2 x 23 3/4	15 1/2 x 28 1/4	15 1/2 x 33 3/4	15 1/2 x 37 1/2	18 1/2 x 34 1/2	18 1/2 x 37 1/2	21 1/2 x 36	27 1/2 x 32 1/2
Area of smoke outlets—Total	sq. in.	268	365	462	527	532	575	655	716	854	1078	1128	1250	1360	1480	1755
Water content	gal.	308	370	480	570	580	680	730	745	862	940	1160	1273	1355	1714	1861
Size of main steam outlet	in.	6	8	8	8	8	8	8	8	8	10	10	10	10	10	10
Size of return	in.	4	5	5	5	5	5	5	5	5	6	6	6	6	6	6
Number and size of cleanouts		2-18x24	2-18x24	2-24x30	2-24x30	2-24x30	2-30x30	2-30x30	2-30x30	3-30x30	3-30x30	3-30x36	3-30x36	3-30x36	3-30x42	3-30x42
Diameter of breeching—1 boiler	in.	21	23	26	28	28	30	31	31	33	35	39	41	41	43	45
Diameter of stack—1 boiler	in.	19	21	24	26	26	28	29	29	31	33	36	38	38	40	42
Minimum height of stack—1 boiler	ft.	55	60	65	70	70	75	75	75	80	85	95	95	95	110	110
Diameter of breeching—2 boilers	in.	27	30	34	36	36	40	41	41	44	47	50	54	54	56	58
Diameter of stack—2 boilers	in.	25	28	32	34	34	37	38	38	41	44	47	50	50	52	54
Minimum hght. of stack—2 boilers	ft.	65	70	75	80	80	85	85	85	90	105	105	105	105	120	120
Covering surface	sq. ft.	131	146	184	196	198	218	247	240	271	342	359	375	400	457	472
Weight complete, oil burning	lbs.	6740	8150	9860	10630	11210	12350	13190	14550	16230	18530	21020	23390	25420	29670	33070
Weight complete, coal burning	lbs.	7520	9020	10820	11700	12410	13650	14610	16010	17830	20630	23300	25865	28120	32610	36670

TWIN SECTION BOILER FOR USE WHERE COMPLETE KNOCKDOWN IS NOT REQUIRED

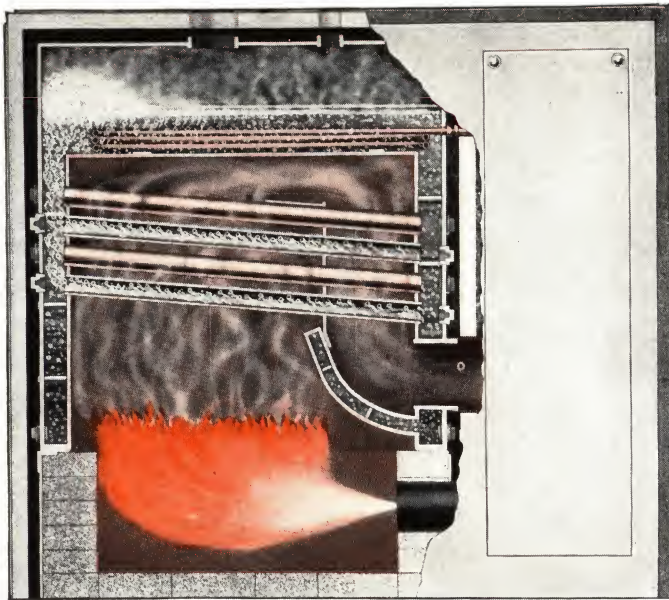


Left:
Two halves of Twin Section
Boiler being brought together
for bolting.

Right:
Dimensions for Twin Sections
(when completely bolted) are
same as for "C" on Page 6.



"FUEL-SAVER" Type "DD" Oil Burning WATER TUBE RESIDENTIAL STEEL BOILERS



The International "Fuel-Saver" for residential heating meets the increasing demand for a boiler capable of absorbing the highly efficient heat generation of the various types of automatic firing devices. The superiority of water tube boilers lies mainly in their quicker steaming ability and maximum utilization of heat produced because of more effective circulation of boiler water and heated gases.

The residential "Fuel-Saver" is actually a miniature of large water tube boilers described in preceding pages and duplicates their design and rugged construction for benefit of home owner. The three principal features of water tube boiler performance of particular importance to residential heating are:

- (1) *Quicker steaming* due to rapid and positive internal water circulation.
- (2) *Maximum heat absorption* due to effective distribution of heated gases.
- (3) *Easy to keep clean* due to accessibility of heating surfaces.

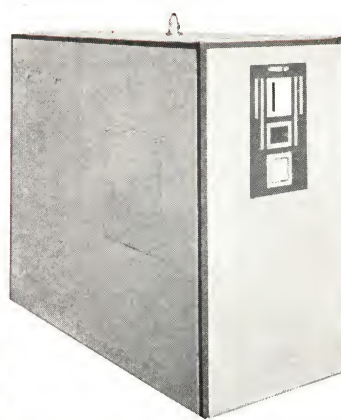
These three outstanding characteristics are producing savings for home owners in excess of twenty percent.

AIR CONDITIONING APPLICATION

The value of the efficient "Fuel-Saver" design is emphasized when used with the modern split system of air conditioning. The unusually quick steaming feature assures an adequate flow of steam to the air heat exchangers, in response to call from air conditioning controls, with an ample reserve for the direct radiation resulting in even and efficient heating.

The domestic hot water heater included in "Fuel-Saver" as standard equipment also tends to simplify the air conditioning system as it eliminates the necessity of a separate piece of equipment.

Complete information on the many other advantages of "Fuel-Saver" for split system heating will be furnished on request.



Showing Jacket for DeLuxe Model
Entirely Enclosing Oil Burner



Showing Jacket for Standard
Model
Oil Burner Partly Exposed
in Rear

OTHER "FUEL-SAVER" FEATURES

COMPLETE COMBUSTION—Large combustion space permits mixing of air and fuel in proper proportions, insuring complete combustion.

ADEQUATE DRAFT—Hot gases passing around water tubes have self-cleaning action, preventing choking of draft through collection of soot.

LONG FLUE TRAVEL—Note how verticle baffle and low flue outlet compel gases to travel twice across tubes. This long flue travel insures absorption of maximum heat value from fuel.

LARGE STEAM SPACE—Unusually large steam disengagement area running the full length of the boiler facilitates quick steaming and provides ample storage of dry steam. Because of their free circulation, water tube boilers do not "prime" or boil over, thus eliminating the cause of annoying knocking in pipes and radiators.

AMPLE WATER CONTENT—Ample water walls entirely enclosing the boiler and water covering the crown for the full length of the boiler maintain uniform room temperatures, without lowering the boiler water line.

CONTINUOUS HOT WATER SUPPLY—Location of the oversize copper coil in the rapidly moving water hot from the "Fuel-Saver" tubes eliminates the possibility of failure of hot water supply from stagnant chilled water around the coil.

EASILY CLEANED—Tubes and combustion chamber easily cleaned through large access door in side of boiler.

EASY BURNER SERVICING—Quick and easy access to the enclosed burner and controls in the De Luxe Jacket is provided by a full height door on each side and a removable lower panel at the rear.

INTERNATIONAL "FUEL-SAVERS"

Save for Home Owners by Stoker Operation



TYPE "DD" STOKER FIRED

The International Stoker-Boiler is of welded steel water tube construction and is particularly adapted to stoker fired operation.

The boiler is constructed so as to allow either bin feed or hopper feed stokers to be installed through the front, back, or either side. In the De Luxe models, space within the jacket at the rear of the boiler is provided, and if the stoker mechanism is sufficiently compact, this may be entirely enclosed in the boiler casing.

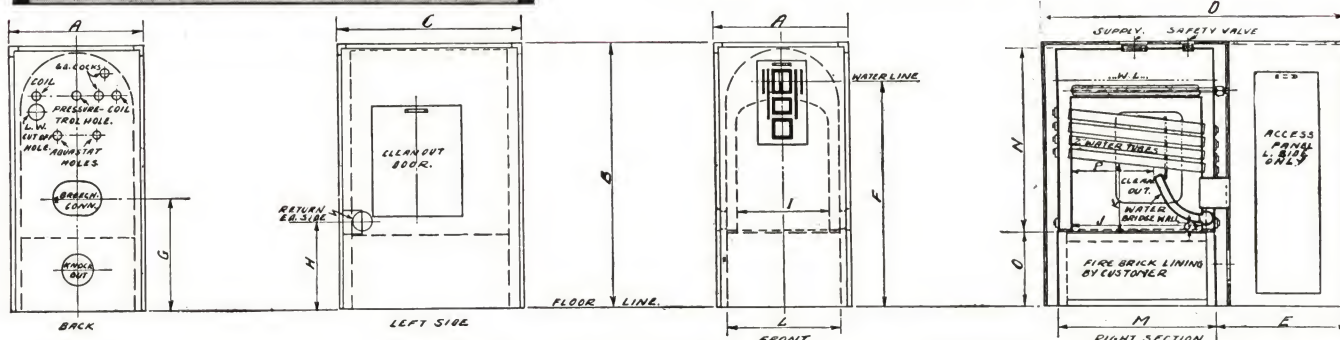
A single steel baffle directs the hot gases in two vertical passes across the tubes which are inclined slightly from the horizontal. A large clean-out door on the side of the boiler permits easy access to the interior for cleaning fly-ash from the tubes and from the settling chamber in the rear.

The jacket is well insulated and very neat in appearance. A copper coil for instantaneous heating of domestic water is available on all boilers as optional equipment.

Type "DD" was tested by the Anthracite Industries Laboratory and produced highly satisfactory results, amply substantiating our ratings and statements. Firing by a typical anthracite stoker gave extremely high overall efficiencies in this test.



CAPACITIES AND DIMENSIONS FOR TYPE "DD" BOILERS OIL AND STOKER FIRED



REGULAR EQUIPMENT FURNISHED WITH TYPE DD BOILERS

Steam and Vapor Boilers are fitted with safety valve, pressure gauge, water gauge, gauge cocks, and the hot water boilers with altitude gauge and thermometer.

Boiler Number.....	DD-50	DD-51	DD-52	DD-53	DD-54	DD-55	DD-56	DD-57	DD-58	DD-59
S.H.B.I. steam rating.....sq.ft.	510	634	788	1028	1201	1451	1688	1932	2271	2550
S.H.B.I. hot water rating.....sq.ft.	816	1014	1260	1644	1921	2321	2700	3091	3633	4080
Heating surface.....sq.ft.	30	37.3	46.4	60.5	70.7	85.4	99.3	113.7	133.6	150
Furnace volume—less base.....cu.ft.	2.25	2.4	3.2	4	5.2	6.4	7.8	9.5	10.9	12.5
Gross base volume.....cu.ft.	5.2	5.9	7.1	9.2	10.6	12.7	15	19.3	22.5	25.4
A—Width overall.....in.	28	28	28	31	31	34	34	34	34	34
B—Height overall.....in.	61	61	61	61	61	61	67	67	67	67
C—Length overall Std. Jacket.....in.	36½	36½	36½	48½	48½	51½	64	64	74	82
Space required to remove tubes.....in.	21½	21½	26½	32½	38	41	47	54	64	72
F—Low water line height.....in.	52½	52½	52½	52	52	52	58	58	58	58
G—Breeching conn. height.....in.	28	28	28	25¾	25¾	25¾	28¾	28¾	28¾	28¾
Breeching conn. size.....in.	6x9	6x9	6x9	7x10	7x10	7x11½	7x16	7x16	7x19	7x19
Smoke pipe size.....in.	8	8	8	9	9	10	13	13	15	15
H—Return height.....in.	20	20	20	20	20	20	24	24	24	24
I—Furnace width.....in.	15	18	18	21	21	24	24	24	24	24
J—Furnace length.....in.	18½	18½	23½	29½	35¼	38¼	44	51	61	69
P—Length to water bridge wall.....in.	11¼	11¼	15	19¼	23¾	27¾	27¾	33¾	41¼	46¾
Q—Clearance at rear from base to base wall.....in.	4	4	4	¼	¼	¼	¼	¼	¼	¼
K—Average height to bottom of tubes.....in.	14	17	17	15¾	16	15¾	17¾	17¾	17¼	17¼
L—Boiler and base width.....in.	20-21	23-24	23-24	26	26	29	29	29	29	29
M—Boiler and base length.....in.	25	25	30	36	41¾	44¾	50½	57½	67½	75½
N—Boiler height**.....in.	42½	42½	42½	42½	42½	42½	45½	45½	45½	45½
O—Base height.....in.	17	17	17	17	17	17	20	20	20	20
Coil heating surface.....sq.ft.	15	15	15	15	15	21	21	21	21	21
Maximum number gal. 140° domestic hot water per hour copper coil can discharge based on 40° feed water.....	146	182	227	296	346	418	436	525	525	525
Supply and return size.....in.	3-3	4-3	4-3	4-3	4-3	5-3	6-4	6-4	6-4	6-4
Weight of bare boiler.....lbs.	840	940	1040	1200	1300	1450	1760	1860	2270	2370
Weight of boiler—total.....lbs.	1100	1180	1275	1485	1625	1780	2130	2180	2800	2900

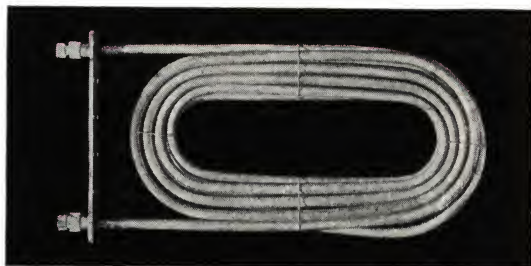
* Add 4" to these widths for projection of return couplings. ** Add 2" to these heights for projection of steam couplings.

SAVE WITH THE INTERNATIONAL "FUEL-SAVER"

INTERNATIONAL "FUEL-SAVERS"

provide plenty of hot water, at low cost,
clean enough for cooking

NO STORAGE TANK NECESSARY



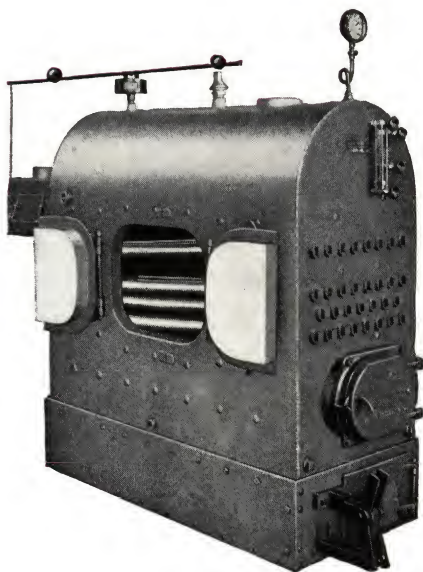
Coil of seamless copper tubing used for supplying clean hot water for domestic use.

A valuable feature of "Fuel-Saver" Water Tube Steel Boilers is the ample supply of hot water they provide for household use. The whole year round, regardless of season, "Fuel-Savers" instantaneously furnish fresh clean hot water direct from the drinking water supply. No storage tanks are necessary and thus no sediment or rust collects to taint the water used and make it unsuitable for cooking purposes. Households equipped with "Fuel-Saver" Water Tube Steel Boilers habitually use hot water direct from the faucet for cooking as well as cleaning.

An oversize heavy-gauge copper coil submerged in the heated water above the crown of the boiler furnishes an adequate supply of hot water for all domestic needs. The coil is large enough to insure an uninterrupted supply of uniformly hot water for all household requirements. In summer, when the heating system is shut down, the domestic hot water service continues in operation, automatically controlled by an aquastat supplied with the stoker.

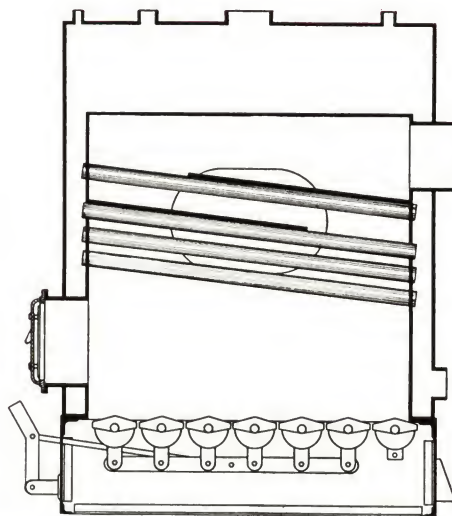
"FUEL-SAVER" Type SP For Hand-Fired Coal

ADAPTABLE FOR GAS OR OIL FUEL



**International "Fuel-Saver"
Water Tube Steel Heating
Boiler, Type SP**

Note large clean-out door providing easy accessibility for cleaning and inspection.



Line drawing showing horizontal baffling and three pass flue gas travel. Note that the grates extend the full length of the base, eliminating bridge walls and providing maximum radiant heat to the tube bank.

Horizontal baffling may be supplied for Type C and other International Boilers when required.

CAPACITY—
STEAM 430 TO 1960 SQ. FT.
HOT WATER 690 TO 3140
SQ. FT.

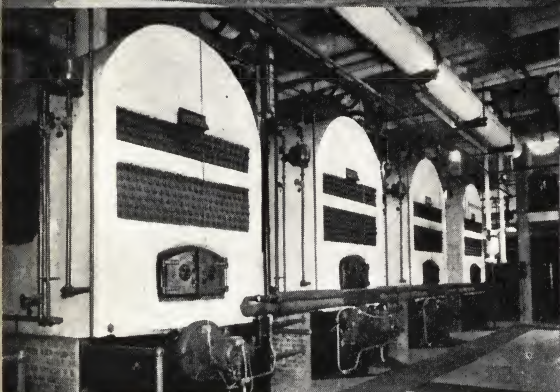
For those installations that do not require the large capacity of the Type C Boiler, the Type SP Water Tube Steel Boiler is recommended.

Although smaller than the Type C Boiler, the Type SP embodies the same sound water tube design and high quality of construction. It possesses the same quick steaming qualities and the same fuel economy and has all the desirable features of design and construction of the Type C Boiler. It is a three-pass boiler with horizontal baffles instead of vertical as in Type C.

Installations of "FUEL-SAVERS" and Where They Are Made



Picture at left shows W.P.A. project at Boston, Mass., and below, stoker-fired "Fuel-Saver" installations in heating plant for the project.



Picture of large high school at Dobbs Ferry, N. Y., and below, illustration of installations of four oil-fired "Fuel-Savers" in its modern-equipped boiler room.



THE name of the International Boiler Works Company has been well-known in the field of commercial boilers for more than a half-century. In designing boilers for this work, only the soundest engineering principles can prevail, because the success or failure of such installations has far-reaching consequences. It may involve the question of profit or loss in operating an entire business enterprise.

International "Fuel-Saver" Water Tube Steel Heating Boilers are a sound investment for the owners of income-producing buildings where profits can be realized only if the cost of operation and maintenance is reduced to a minimum.



Digitized by ASSOCIATION FOR PRESERVATION TECHNOLOGY, www.apti.org for the BUILDING TECHNOLOGY HERITAGE LIBRARY <https://archive.org/details/buildingtechnologyheritagelibrary>

THE INTERNATIONAL BOILER WORKS CO

EAST STROUDSBURG, PENNSYLVANIA

SALES OFFICES

NEW YORK—101 PARK AVENUE

PHILADELPHIA

SCRANTON, PA.

WASHINGTON, D. C.

WILMINGTON, DEL.

BOSTON, MASS.